

New York State View of Lake Level Regulation

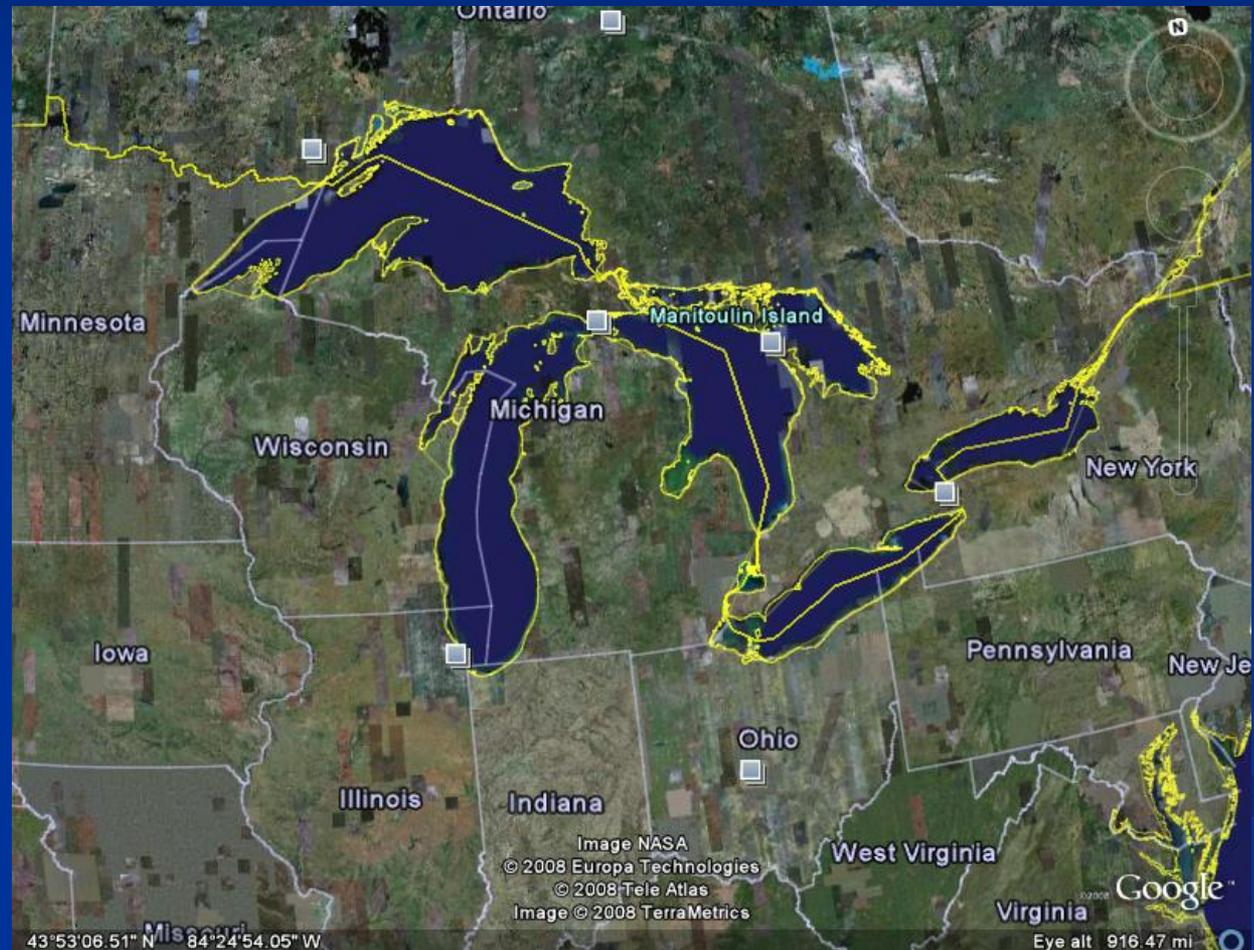
2000 – IJC directs the Study Board to investigate alternative plans for water level regulation.

Purpose: identify a new plan that provides **environmental benefits** without disproportionate impacts to any other interest.

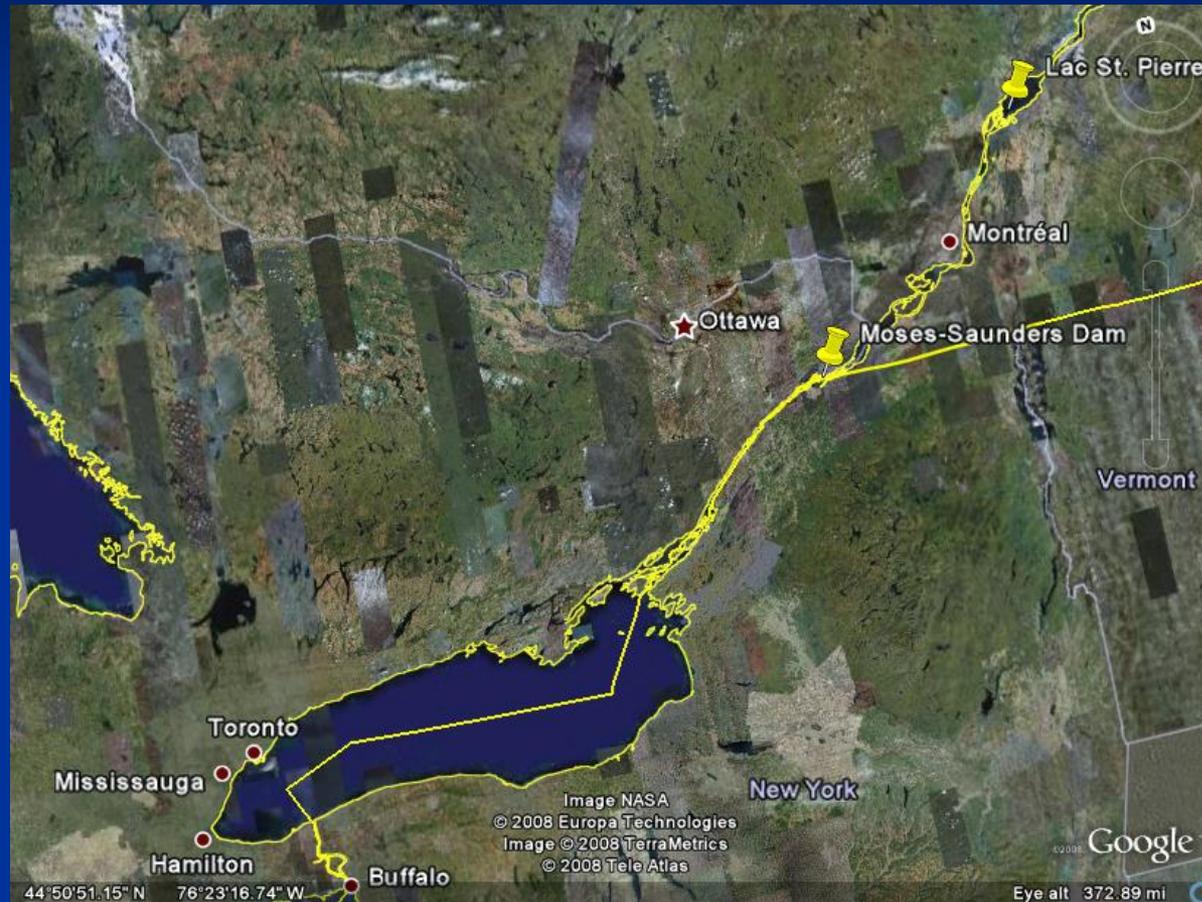
5 Interests evaluated by Monetary Measures for each plan:

- Municipal & Industrial water users
- Hydro-electric producers
- Commercial Shipping
- Riparian Property Owners
- Recreational Boaters

Environmental Performance was measured by Indicator Species.



Three sub-regions: Lake Ontario, the Upper St. Lawrence (above the Power Dam) and the Lower St. Lawrence through Lac St. Pierre.



- Separate environmental indicators were developed for each sub-region.
- Rapid draw downs are not possible because excess releases at the dam flood the Lower St. Lawrence region.

2002: The State Division of Coastal Resources first began following the studies.

The Study Board appointed work groups:

- Modeling
- Information Management
- Public Interest Advisory Group
- Technical Work Groups for Coastal Processes and each of the 5 interests plus Wetlands and Environment.

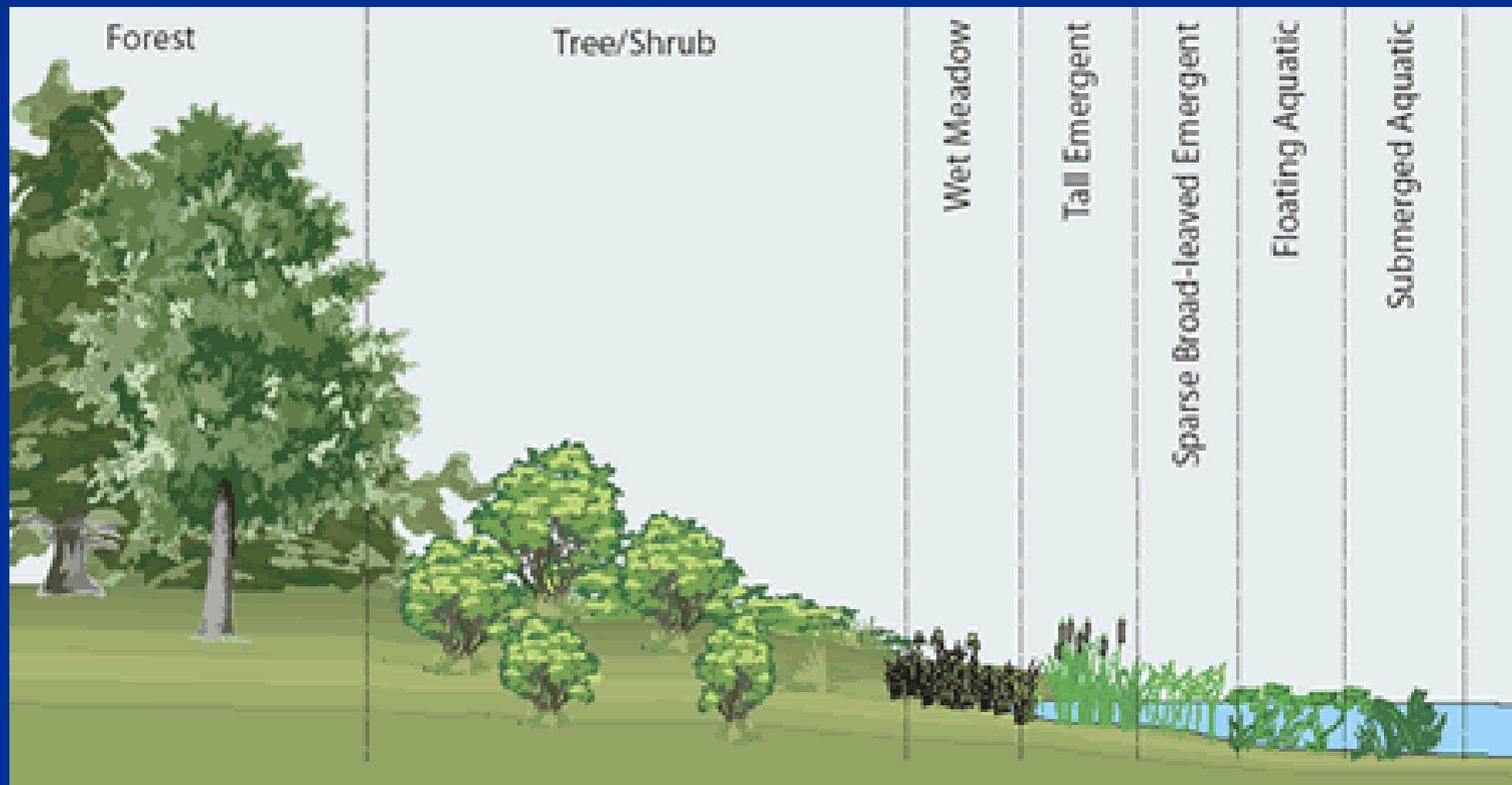
Example: Coastal Processes Technical Work Group - Planning Objectives:

1. Reduce real/potential flood events and associated damages along the shores of Lake Ontario and the St. Lawrence River, over the planning horizon of the study.
2. Reduce real/potential erosion and associated damages along the shores of Lake Ontario and the St. Lawrence River, over the planning horizon of the study.
3. Reduce real/potential extreme low water events and associated damages along the shores of Lake Ontario and the St. Lawrence River, over the planning horizon of the study.

Wet Meadow Marsh: Alternately dry and wet.

Note Cattails: always wet.

From Timmeman: Improving for Birds Marsh Habitats



With insufficient drying, cattails replace mixed meadow-marsh.
Annual wet-dry variation is needed as well as inter-annual variability.



2002-2005: Study Board Formulates Alternative Plans and Advances Four for Detailed Analysis

- Plan A+
 - minimizes water level variation
 - maximizes net economic
 - little environmental benefit
 - increases riparian property impacts on Lake Ontario and Lower St. Lawrence.

- Plan B+
 - maximizes environmental benefits
 - benefits most other interests
 - increases riparian property impacts on Lake Ontario and the Lower St. Lawrence.

- Plan D+
 - closest to existing regulations
 - small environmental improvement
 - small increased riparian impacts on Lake Ontario.

- Plan E
 - highest environmental benefits
 - unacceptably high impacts to riparian properties.
 - Not recommended for consideration.

2005 & 2006: IJC releases reports.

First detailed discussion of principal regulation plan options.

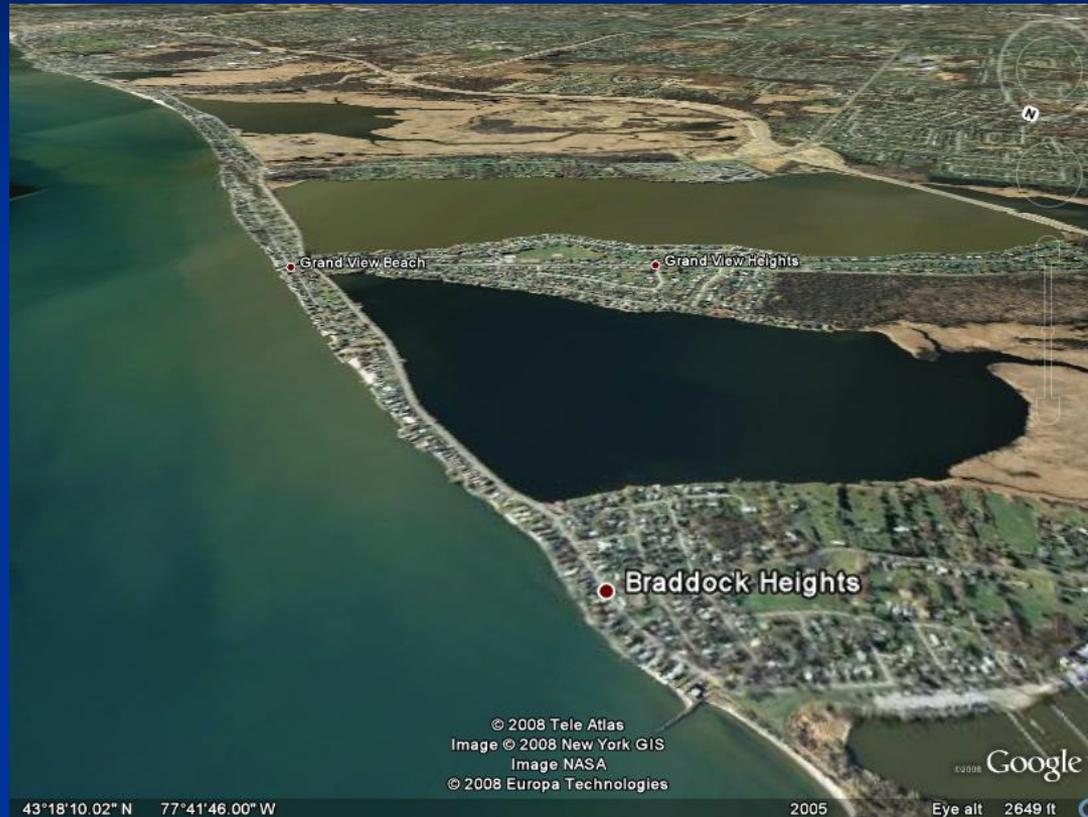
- Summer 2005: Public Presentations of Alternatives.
- 9/05 Draft Final Report
- 11/05 Study Board met with NYS on shore protection mitigation.
- 2006: Study Board Final Report presents 3 viable options:
 - A+ (best net economic benefits)
 - B+ (best environmental performance)
 - D+ (net benefits for most interests but small environmental benefit).

- Post 2006: IJC continued work to improve A+, B+ and D+.
- NYS did not learn about this work until Spring 2007.

- The difficulty: Plans that simulate natural flows, helping the environment, tend to increase shoreline impacts on Lake Ontario and the Lower St. Lawrence River.

Existing coastal hazards greatly exceed the impacts of new regulations

Annualized depreciation of shore protection was estimated by the Study Board at \$54 million, versus an estimated \$2.5 million increase for Plan B+



- The IJC is immune from liability by law.
- NYPA, the dam operator, is required to provide mitigation.
- Is NYS liable for claims?

2007 & 2008:

- 2007: Study Board prepares a new plan called “2007”.
- Plan 2007 includes an “Adaptive Management” feature: lower water levels after 20 years if they have not been below a threshold for two consecutive years. (Intended to dry out wetland invasives.)
- Fall 2007: NYS begins to review Plan 2007.
- Winter 2007: NYS finds environmental benefits of 2007 are negligible.
- Winter 2007: NYS asks for time to prepare mitigation plans to support B+.
 - NYS recommends local management plans that address existing risk, new water level regulations and environmental quality.
- March 2008: IJC recommends Plan 2007 and opens public hearings.
- September 2008: IJC withdraws Plan 2007 in response to negative comments and recommends: **a new work group to prepare a comprehensive approach to lake level regulation.**

Lessons Learned

- Water level regulation is a complex negotiation with multiple interests.
- Ecological health is not covered in the Boundary Waters Treaty.
- Consider ecological impacts and sustainable use.
 - Free flow vs. Regulation: what are the impacts?
 - Trade offs for different regulation plans.
- Regulation impacts vary by season.
 - Inundation vs. Storminess
- Use valid supplies information including current climate change projections.
- Create a Monitoring Program to document conditions and change.
- Prepare an Adaptive Management Plan to respond to monitoring information.
- Get buy-in from states and provinces before announcing a preferred approach.